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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,207	01/04/2002	Martin L. Plumer	S01.12-0846/STL 10285	2028
7590	08/23/2004			
EXAMINER				
EVANS, JEFFERSON A.				
ART UNIT		PAPER NUMBER		
2652				
DATE MAILED: 08/23/2004				

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Minneapolis, MN 55402-3319

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,207

Applicant(s)

PLUMER ET AL.

Examiner

Jefferson Evans

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9-12,14-19 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) 3,6,9,12,14-16,19 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,7,10,11,17,18,22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 and 13 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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Claims 1, 3-7, 9-12, 14-19, and 21-23 are pending.

Claims 3, 6, 9, 12, 14-16, 19, and 21 have been withdrawn from further consideration

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 7, 10, 11, 17, 18, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. 6,128,166) in view of Cohen et al (U.S. 5,703,740) and/or Chang et al (U.S. 6,542,331). Note figure 7. Tanaka discloses a single write pole 26 separated from a write coil 27 by an insulating material, and a MR element 24 between shield layers 23.

On the bottom of page 11 and the top of page 12 of the amendment filed 12-11-2003, applicant contends that Tanaka does not disclose a lack of a return path and that structure in Tanaka, such as one of the read element shields, would likely act as a return path.

In response, the Examiner first notes that the claim language refers to "a return pole element" rather than the "a return path" (the phrase in the claim is considered a bit more limiting). Tanaka discloses the use of a single write pole and includes no disclosure in the specification or depiction in the figures that indicates

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any element of Tanaka would function as a return pole element, and even if some small amount of flux generated by the write pole were to pass through a shield of Tanaka's write element, it would be below a threshold where it could be considered to act as a "return pole element". Applicant's arguments that the Examiner should assume a return pole is present even though one is not pictures are not persuasive.

Tanaka does not disclose a helical coil arrangement.

Cohen and Chang each disclose helical coil arrangements.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the coil of Tanaka et al take on a helical arrangement. The motivation would have been: such a coil arrangement was an effective manner in which to provide an increased number of turns and to increase efficiency. Chang states (column 3 – line 67 to column 4 – line 6) that a helical coil arrangement can serve to improve magnetic flux creation efficiency and that the methods for fabricating helical shaped coils were known in the art.

The Examiner's position remains that it would be obvious to apply a helical coil as taught by Cohen to Tanaka at the invention was made. Tanaka discloses a single write pole versus a pair of poles thus removing the ability to have turns go around a back area connecting the poles. Tanaka appears to provide a short side extension for the write coil to surround but one of ordinary skill would recognize that the number of turns and efficiency would still be limited and that a helical coil arrangement would be a effective means for overcome this limitation.

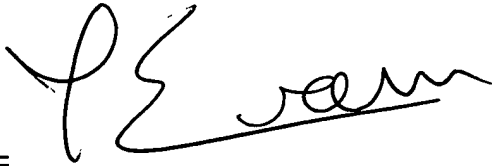
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferson Evans whose telephone number is

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703-308-1610. The examiner can normally be reached on Monday to Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 703-305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JAE

August 19, 2004

Jefferson Evans
Primary Examiner
Art Unit 2652

JEFFERSON EVANS
PRIMARY EXAMINER

JEFFERSON EVANS
PRIMARY EXAMINER